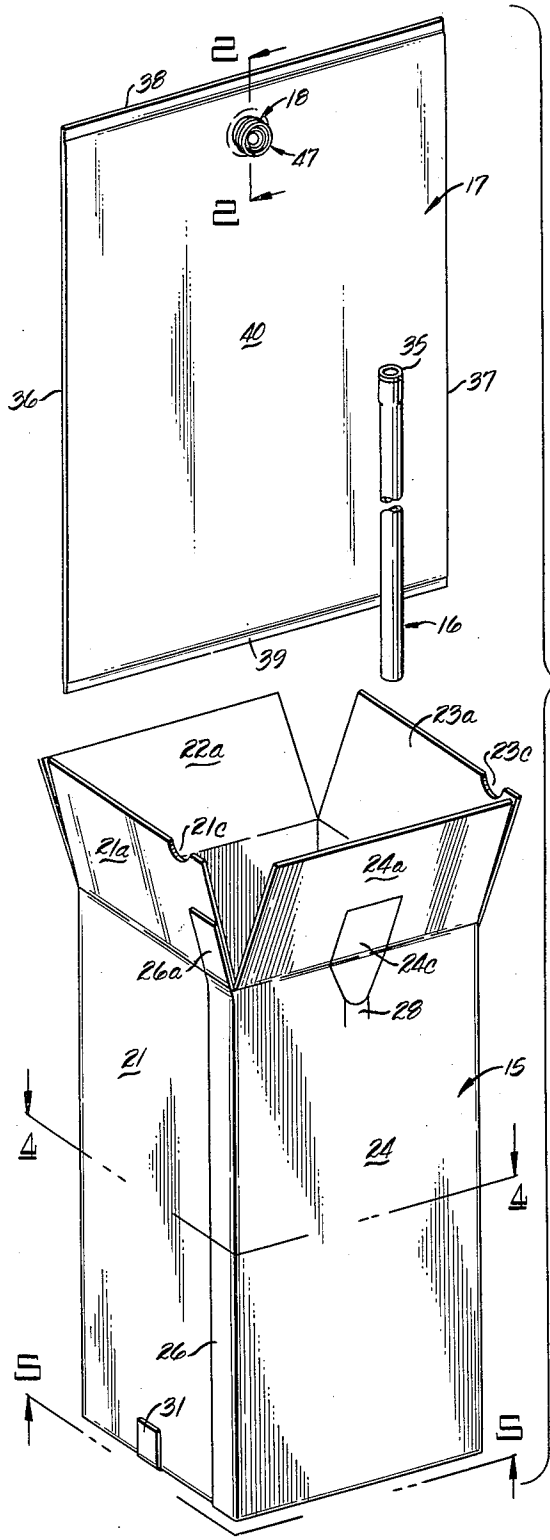
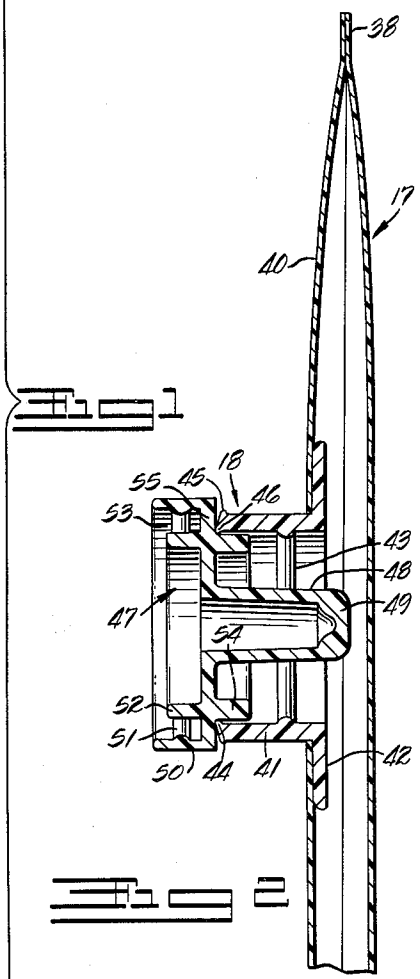
May 21, 1963 R. S. HAMILTON ETAL 3,090,526

DISPOSABLE-TYPE DISPENSING CONTAINER PACKAGE

Filed April 20, 1961 3 Sheets-Sheet 1





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DISPOSABLE-TYPE DISPENSING CONTAINER PACKAGE

Filed April 20, 1961 3 Sheets-Sheet 2

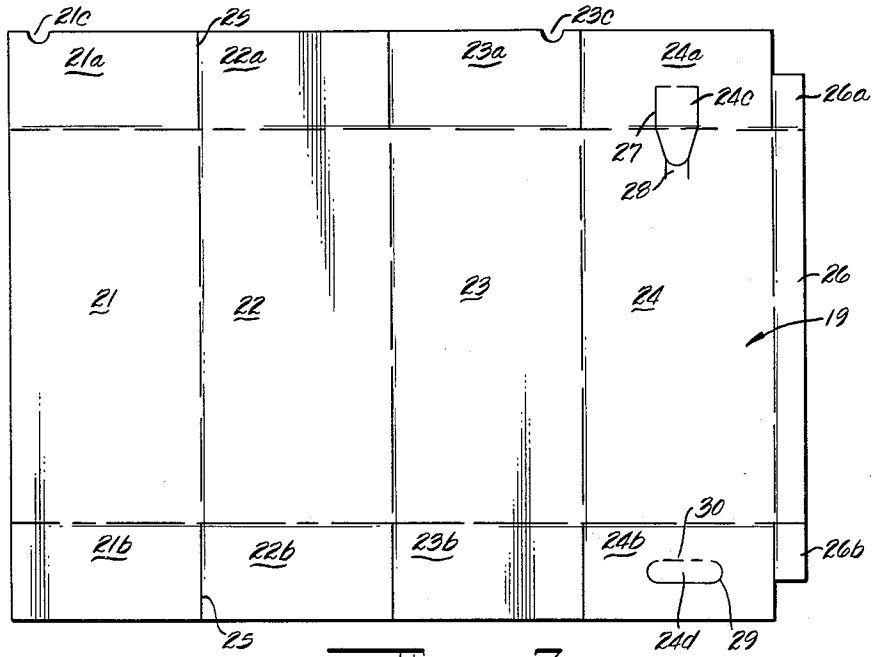


FIG 3

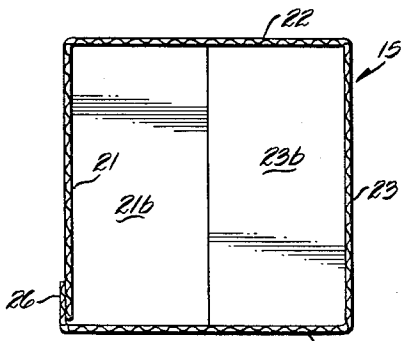


FIG 4

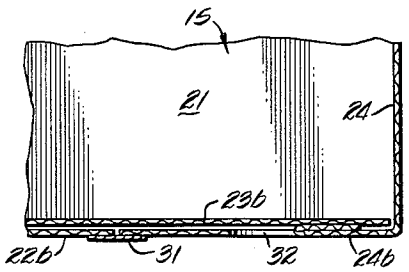


FIG 6

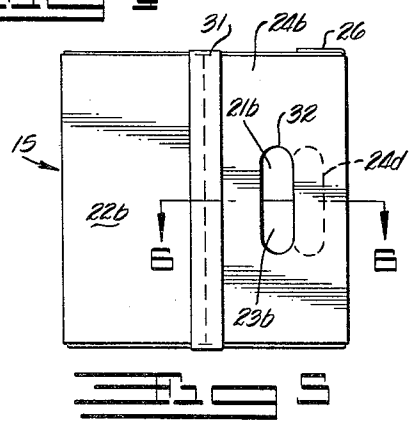


FIG 5

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DISPOSABLE-TYPE DISPENSING CONTAINER PACKAGE

Filed April 20, 1961 3 Sheets-Sheet 3

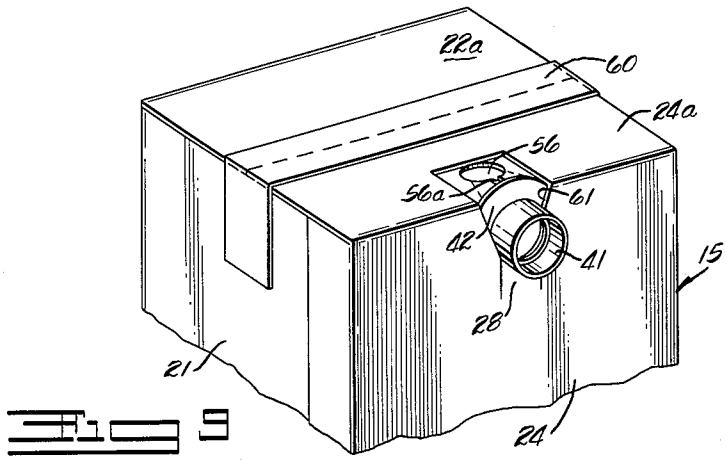


Fig 9

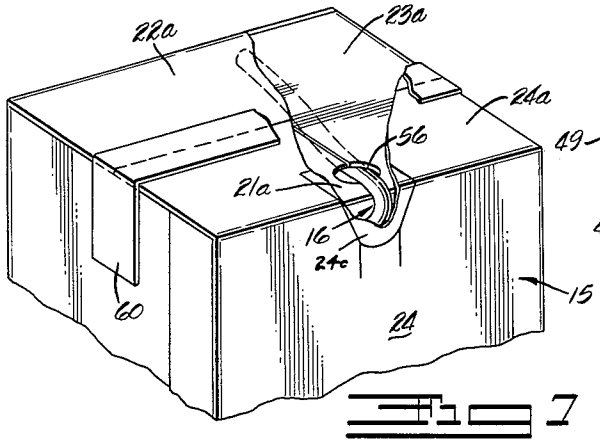


Fig 7

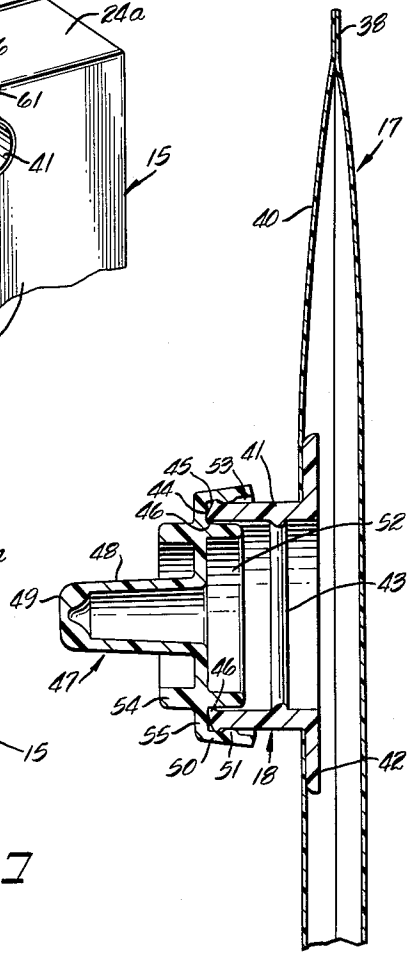


Fig 10

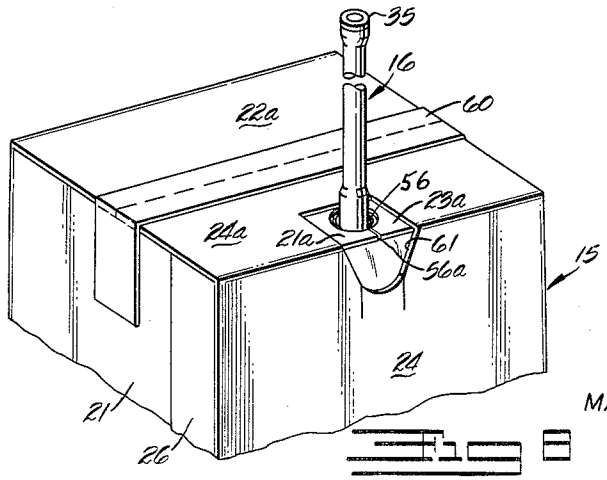


Fig 8

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3,090,526

DISPOSABLE-TYPE DISPENSING CONTAINER PACKAGE

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Filed Apr. 20, 1961, Ser. No. 104,411
4 Claims. (Cl. 222—105)

This invention relates to a disposable-type dispensing container package. It has to do, more particularly, with a dispensing container or receptacle package which can be filled with a fluid and from which the fluid may be dispensed. It is particularly adaptable to the containing and dispensing of liquids, such as milk or water, in a completely sanitary manner.

More specifically, the present invention deals with a container package of the type which includes an outer protective supporting and confining package shell, usually in the form of a box of corrugated board, paperboard, or the like, and an inner sanitary flexible liner or inner container, usually in the form of a collapsible bag, which is enclosed within and protected by the outer shell. The outer shell is usually supplied to the dealer in the liquid as a box in knockdown form and when it is to be used, it is set-up as a complete box with open flaps at its upper end so that it can receive and retain the liner. The liner is usually supplied to the dealer in flat condition as a liquid-tight collapsed bag and is expanded into the interior of the open box as it is positioned therein. After the bag is properly positioned in the box and filled, the flaps of the box are sealed in place to completely enclose and protect the bag. The bag is provided with a suitably positioned opening which is used both as a filling and dispensing opening and which has a closure and nozzle unit cooperating therewith. Usually the bag opening is at the top of the box during filling and is sealed after filling by its closure unit and then the upper flaps of the box are folded into closed position and secured. At the time the bag is filled, a flexible sealed dispensing tube is attached to the bag closure and nozzle unit and is folded within the associated box flaps when they are closed.

When the container package is to be used in the dispensing operation, for example in a milk or water cooler, the box is inverted, the flexible tube pulled from beneath the box flaps, which will now be at the bottom of the box, and the tube is unsealed and is connected to the dispensing means of the cooler. According to this invention, the box is provided with a special opening and associated pull-out tab arrangement at the dispensing end thereof to facilitate pulling out of the flexible dispensing tube to extended condition for connection to the dispensing means of the cooler. This pull-out tab and opening arrangement is also so designed that the flexible tube can be removed from the bag closure and dispensing nozzle unit and the unit can then be shifted relative to the box to facilitate use of part of it as a pouring spout extending from the box to make possible pouring of the liquid therefrom merely by tipping the box from its upright position. Also, the pouring spout can be resealed after each pouring operation if desired.

The accompanying drawings illustrate a preferred embodiment of this invention and in these drawings:

FIGURE 1 is a perspective exploded view of the units constituting the container package in which this invention is embodied.

FIGURE 2 is an enlarged view in section taken along line 2—2 of FIGURE 1 through the bag closure unit, showing the nozzle part thereof in protected position.

FIGURE 3 is a flat view of the knocked-down box of the container package.

FIGURE 4 is a horizontal sectional view taken along line 4—4 of FIGURE 1 through the set-up box.

FIGURE 5 is a bottom plan view of the box taken substantially along line 5—5 of FIGURE 1.

FIGURE 6 is an enlarged vertical sectional view taken along line 6—6 of FIGURE 5.

FIGURE 7 is a perspective view, partly broken away, of the top portion of the box showing the flexible dispensing tube bent beneath the closure flaps thereof.

FIGURE 8 is a similar perspective view showing the flexible tube withdrawn for the dispensing operation.

FIGURE 9 is a similar view but showing part of the closure unit arranged as a pouring spout.

FIGURE 10 is an enlarged vertical sectional view similar to FIGURE 2 but showing the nozzle part of the closure unit reversed into the dispensing position.

With reference to FIGURE 1, the various units of the container package of this invention are illustrated therein and comprise the box 15 which is shown in set-up condition with its upper closure flaps open, the flexible dispensing tube 16, and the bag 17 which is shown in flat condition and is provided with the closure and nozzle unit 18.

The box 15 may be of suitable sheet material, such as corrugated fiberboard, solid fiberboard, paperboard, or similar material, and its details are shown in FIGURES 3 to 6. The box may be made from a suitable blank 19, as shown in FIGURE 3, which is scored and slit to provide the side walls 21, 22, 23, and 24, having the attached upper closure flaps 21*a*, 22*a*, 23*a*, and 24*a*, and the attached lower closure flaps 21*b*, 22*b*, 23*b*, and 24*b*. The various closure flaps are hinged to the respective side walls and are separated from each other at the slits 25. The outer edge of the wall 24 has hinged thereto an attaching flange 26 with hinged upper and lower tabs 26*a* and 26*b*. The top closure flaps 21*a* and 23*a* are provided with the outwardly opening notches 21*c* and 23*c* respectively, arranged as indicated. A pull-out tab 24*c* is provided and includes a main portion in the closure flap 24*a* and a portion in the wall 24 hinged thereto, the tab being normally secured in position along a weakened border portion 27. The portion of the tab within the wall 24 converges downwardly where it meets with an upstanding flexible tab portion 28 formed in the wall 24. The lower closure flap 24*b* is provided with a hinged pull-out flap 24*b* which may be pulled outwardly to expose a finger-receiving opening. A slit or weakened line 29 (FIGURE 3) is provided around the greater portion of the flap 24*d* but it is hinged at one side, as indicated at 30.

When the box 15 is set up, the blank is folded along the various fold lines between the vertical walls 21, 22, 23 and 24 and the fold line between the wall 24 and the attaching flange 26. The flange 26, as shown in FIGURE 4, is overlapped with the outer surface of the adjacent wall 21 and is glued or otherwise secured in place. Tabs 26*a* and 26*b* are glued to the respective upper and lower cover flaps 21*a* and 21*b*. By positioning the flange 26 outside the wall 21, a continuous smooth surface is provided around the interior of the box. The bottom flaps 21*b*, 22*b*, 23*b* and 24*b*, are folded inwardly into overlapping relationship, as shown in FIGURES 5 and 6, and may be secured in that position by means of a piece of adhesive tape 31. If the pull-out flap 24*d* is pulled out to the position indicated by the broken lines in FIGURE 5, the finger-receiving opening 32 is exposed. This opening will be crosswise of the joint between the flaps 21*b* and 23*b* which will flex upwardly to permit insertion of the fingers. Thus, the box, at this time, will be set up to the condition illustrated in FIGURE 1 with the top closure flaps 21*a*, 22*a*, 23*a* and 24*a* in upstanding position.

The dispensing tube 16 is a simple flexible tube which is preferably made of a suitable plastic. It is open at its

lower end but is sealed at its upper end, preferably by a plug **35**. It can be of any suitable length.

The bag **17** is made of suitable flexible plastic such as a transparent polyethylene film. It is formed fluid-tight, preferably from a tubular section of the film, and is shown in flat or collapsed condition with the straight, folded side edges **36** and **37**. The upper and lower edges of the bag are also straight and are provided with the sealed seams **38** and **39** which may be of the heat-sealed type. One of the flat walls **40** of the bag adjacent the upper edge **38** has the closure and nozzle unit **18** sealed in an opening formed in that wall. The flexible bag **17** will be made of a suitable size so that it can be positioned within the relatively rigid box **15** and when expanded, will conform substantially to the shape of the box.

The construction of the closure and nozzle unit **18** and the manner in which it is sealed to the wall **40** of the bag **17** may be as shown in FIGURE 2. The closure unit **18** is provided with an annular neck or collar **41** which has a peripheral attaching flange **42** at its inner edge. The neck **41** is slipped through the dispensing opening in the wall **40** so that the wall **40** around the opening will lie over the flange **42**. The collar **41** and, in fact, the entire unit **18**, will be of suitable plastic material. This material can be heat-sealed to the wall **40** and this is done to seal the collar **41** within the dispensing opening in the bag. It will be noted that the collar **41** is provided with a rib **43** extending around the interior thereof and spaced from the outer edge **44** thereof. This edge **44** is provided with an outwardly extending sealing lip **45** and an inwardly extending sealing lip **46**.

The unit **18** also preferably includes the removable and reversible cap and nozzle **47**. A nozzle portion **48** projects from one of the faces of this cap and is closed at its extremity **49** but is open at its other end. Extending from the opposite side of the body of the cap is an outer sealing flange **50** which has a sealing rib **51** on its inner surface. Concentric with the flange **50** is a flange **52** which is spaced inwardly thereof so that a groove **53** is provided between the flanges **50** and **52**. Projecting from the opposite face of the body of the cap from the flange **52** is a sealing flange **54** which is concentric with and surrounds the nozzle **48**.

When the bags **17** are shipped to the dealer in the liquid to be dispensed and when stored before filling, the cap and nozzle **47** of each unit **18** is positioned on the collar **41** in the manner shown in FIGURES 1 and 2. At this time, the nozzle **48** will project inwardly into the collar **41**. The flange **54** will frictionally engage the sealing lip **44** of the collar **41** so that the cap will be retained in position thereon. The nozzle **48** will consequently not be exposed and will be protected.

Although the bag **17** and closure and nozzle unit **18** have been described in detail, it is to be understood that variations in each may be made without departing from the invention as defined in the claims that appear hereinafter.

When it is desired to dispense from the bag **17**, the cap **47** is removed and reversed and mounted on the collar **41** in the manner indicated in FIGURE 10. The groove **53** of the cap **47** will slip over the outer edge of the collar **41**. The cap flange **50** will surround the collar and the lip **51** will snap inwardly of the neck lip **45**. Therefore, the cap will be retained in position with the nozzle **48** projecting outwardly. When it is desired to dispense through the nozzle, its closed extremity **49**, which is now outermost, may be snipped off to provide a dispensing opening. Then the unsealed or open end of the tube **16** may be slipped over the nozzle and friction will serve to keep it thereon.

When the bag **17** is filled with liquid, the cap **47** of the closure unit **18** will be completely removed. Usually the bag is filled by means of an automatic filling machine which will have a filler nozzle that will engage the neck **41**. However, prior to filling, the collapsed bag **17** shown in FIGURE 1 is inserted in the upwardly opening box **15** also shown in that figure. As the bag is filled, it will expand and conform substantially to the inner contour of the box. It will be noted that due to the fact that the attaching flange **26** of the box is outside the box, there is no box seam edge exposed at the interior of the box for contact with the adjacent bag which might cause rupturing thereof. When the bag is filled, the flaps **21***a* and **23***a* are folded inwardly and the notches **21***c* and **23***c* thereof will align, as shown in FIGURE 7, and will provide an opening **56** between the two flaps through which the tube **16** can be passed. The tube is passed upwardly between the box wall **24** and the adjacent edges of the closure flaps **21***a* and **23***a* and is bent downwardly through the opening so that its free end will project beneath and flex upwardly against the lower surfaces of said flaps. Then the outermost closure flaps **22***a* and **24***a* are folded downwardly over the closure flaps **21***a* and **23***a*. The top closure flaps may be maintained in closing position by a strip of adhesive tape **60**, as indicated in this figure. The packaged liquid is now ready for supplying to the user.

If the package is to be used in a cooler, the tab **24***c* is pulled from the top flap **24***a* and the adjacent side **24** of the box, as shown in FIGURE 8. The bent tube **16** is pulled outwardly from the opening **56** and while it is held upright, its lower portion is shifted laterally inwardly through the slot **56***a*, formed between the meeting edges of the flaps **21***a* and **23***a*, so that it will stand upright and project upwardly through the opening **56**. However, the opening **56** is of smaller diameter than the upstanding flange **54** on the cap **47** so that only the tube will be able to pass through the opening and the cap will serve as a stop to limit outward withdrawal movement thereof. The flaps **21***a* and **23***a* will spread during movement of the tube therebetween through the slot **56***a* into the tube-receiving opening **56** but will then spring back into position. Thus, the package is now ready for use in the cooler and it is merely necessary to invert it and connect the tube **16** to the dispensing means of the cooler after the plugged end **35** of the tube is cut off.

When it is desired to merely pour the contents of the bag **17** from the package, the closure unit **18** is so positioned as indicated in FIGURE 9. While the cap **47** is in sealing position on the collar **41**, the collar is pulled outwardly, after removal of the tab **24***c*, into the side opening **61** which converges at its lower end. The collar **41** is forced downwardly into the converging opening **61** and will be maintained therein by friction. The flange **42** of the closure collar **41** will thereafter prevent the outwardly projecting collar **41** from moving farther outwardly through the opening **61**. The flange **42** will also be positioned between the box wall **24** and the closure flaps **21***a* and **23***a* which will prevent inward movement of the collar **41**. Thus, the collar **41** will extend laterally outwardly adjacent the upper end of the box **15**, as shown in FIGURE 9, and will serve as a pouring spout upon removal of the cap **47**. The bag may be resealed by replacing the cap **47** on the collar **41**. Tipping of the box **15** for pouring is facilitated by the finger-receiving opening **32**.

It will be apparent from the above description that this invention provides a disposable type dispensing container which is capable of use in connection with various types of coolers as a storage container from which liquid is dispensed or which is capable of use as a container from which the liquid can be poured directly. The bag closure unit and the box are so designed relatively as to facilitate positioning of the closure unit for either purpose.

According to the provisions of the patent statutes, the principles of this invention have been explained and have been illustrated and described in what is now considered to represent the best embodiment. However, it is to be understood that, within the scope of the appended

claims, the invention may be practiced otherwise than as specifically illustrated and described.

Having thus described this invention, what is claimed is:

1. A disposable-type dispensing container package comprising an outer protective box and an inner collapsible bag disposed within and protected by the outer box, said box having an upper end formed by overlapping inner and outer closure flaps and side walls at right angles thereto, said bag having a dispensing outlet with a cooperating closure unit which are disposed directly adjacent the top of the box, said closure unit comprising a collar sealed to said bag at said dispensing outlet and a removable cap and nozzle member which can be mounted on said collar, the nozzle thereof being adapted to receive a flexible dispensing tube, said box having a pull-out tab with portions at right angles to each other which are positioned in an outer closure flap and an adjacent side wall of the box, removal of the tab exposing an opening in the side wall of the box and an opening in the outer closure flap, the inner closure flaps having an opening formed therein beneath the said opening in the outer closure flap, said opening in the inner closure flaps being adapted to receive the tube when attached to said cap and nozzle member and said opening in the side wall being adapted to receive the collar of said closure unit, said opening in the side wall and said opening in the inner closure flaps communicating by means of a slit, said opening in the side wall converging toward its lower end for receiving and embracing the closure collar, and the closure flaps including two inner closure flaps which meet at inner edges which have cooperating notches for forming the other opening, and the slit connecting the openings being between said inner edges, said collar of said closure unit having an outwardly projecting peripheral flange which projects beyond the edges of said collar-receiving opening in the side wall to serve as a stop for preventing complete outward pulling of the collar through said opening when used as a pouring spout, said opening formed by said notches being smaller than said closure and nozzle member to prevent complete pulling out of said member through said opening when used as a dispensing nozzle.

2. A disposable-type dispensing container package comprising an outer protective box and an inner flexible container disposed within and protected by the outer box, said box having an end formed by overlapping inner and outer closure flaps and side walls at an angle thereto, said inner container having a dispensing outlet with a cooperating closure unit which are disposed directly adjacent said end of the box, said closure unit comprising a collar carried by the inner container at said dispensing outlet and a removable cap and nozzle member which can be mounted on said collar, the nozzle thereof being adapted to receive a flexible dispensing tube, said box having a pull-out tab with portions at an angle to each other which are positioned in an outer closure flap and an adjacent side wall of the box, removal of the tab exposing an opening in the side wall of the box and an opening in the outer closure flap, the inner closure flaps having an opening formed therein beneath the opening in the said outer closure flap, said opening in the inner closure flaps being adapted to receive the tube when attached to said cap and nozzle member and said opening in the side wall being adapted to receive the collar of said closure unit, said opening in the side wall and said opening in the inner closure flaps communicating to permit movement of the closure unit from one opening to the other, said opening in the side wall being of sufficient size to receive the closure collar, and the closure flaps including two inner closure flaps which meet at inner edges and which have cooperating notches for forming the other opening that communicates with said opening in the side wall, said collar of said closure unit having an outwardly projecting peripheral flange which projects beyond the edges of said collar-receiving opening in the side wall to serve as a stop for preventing complete outward pulling of the collar through said opening when used as a pouring spout, the notches extending inwardly into said edges of the respective inner closure flaps to produce an opening smaller than said cap and nozzle member to prevent complete pulling out of said member through said opening when used as a dispensing nozzle.

3. A package according to claim 2 in which said peripheral flange of said collar of the closure unit is of sufficient extent relative to the opening in the side wall of the container that when the collar is positioned in said opening to serve as a pouring spout, the flange extends outwardly between said side wall and the adjacent end edges of said inner closure flaps to prevent inward displacement of said collar relative to said opening.

4. A dispensing container package comprising an outer protective box and an inner flexible container disposed within and protected by the outer box, said box having a first wall formed by overlapping inner and outer laminations and a second wall at an angle thereto, said inner container having a dispensing outlet with a cooperating closure unit which are disposed directly adjacent said first wall of the box, said closure unit comprising a collar carried by the inner container at said dispensing outlet and a removable cap and nozzle member which can be mounted on said collar, the nozzle thereof being adapted to receive a flexible dispensing tube, said box having a pull-out tab with portions at an angle to each other which are positioned in an outer lamination of the first wall and the adjacent second wall of the box, removal of the tab exposing an opening in the second wall of the box and an outer opening in the said outer lamination, an inner opening being provided in an inner first wall lamination beneath the said opening in the outer lamination, said inner opening being adapted to receive the tube when attached to said cap and nozzle member and said opening in the second wall being adapted to receive the collar of said closure unit, said opening in the second wall and said inner opening communicating said collar of said closure unit having a portion which projects beyond the edges of said collar-receiving opening in the second wall to serve as a stop for preventing complete outward pulling of the collar through said opening when used as a pouring spout, and said cap and nozzle member having a portion which projects beyond the edges of said inner opening to prevent complete pulling out of said member through said opening when used as a dispensing nozzle.

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